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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,465	06/04/2001	Allen Joseph Rushing	105	3881

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06/18/2003

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EXAMINER

SEVER, ANDREW T

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,465

Applicant(s)

RUSHING, ALLEN JOSEPH

Examiner

Andrew T Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-21, 26 and 27 is/are allowed.
- 6) ☒ Claim(s) 28-36 is/are rejected.
- 7) ☒ Claim(s) 22-25 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 22-25, and 32-34 are objected to because of the following informalities:
Applicant claims that each "sensor" is made of an "emitter-sensor pair", this should be amended to be a "emitter-detector pair" or else each probe is made of a "emitter-sensor pair" as has been discussed in the previous office action. Appropriate correction is required to eliminate the confusion.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 28, 30, 32, 33, are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumizaki et al. (US 6,505,010.)

Izumizaki teaches in figure 4 a multi-channel densitometer for measuring optical density of sample areas. The densitometer has 2 probes (both 33), each having a single sensor (33a and 33b) facing the sample areas (k). Each sensor is made of a light emitter and a detector as is claimed by applicant's claim 32. Each sensor receives light impinging first upon the sample area (k) opposite the sensor and thence from the sample area to a light detector of the sensor. Both probes output a signal characteristic of the

light intensity incident on the light detector to the controller (26). Inherently the controller circuit powers the sensors. As taught in column 7 lines 5-50, the densitometer computes the optical density of at least one from the group of the following functions: toner uniformity, net density, transfer efficiency (lines 17-21 teach that the density detectors are checking for discrepancies in transferred patches), and color (each color has its own densitometer to insure uniformity) as is claimed by applicant's claim 30 and 33. Izumizaki does not specifically show that the sensors are independently locatable probes, however Izumizaki does not teach that they are not either and one with ordinary skill in the art would assume based on the drawing in figure 4 that they are independent.

With regards to applicant's claim 32, Izumizaki teaches in column 5 lines 30-37 the structure of the sensors. Specifically Izumizaki teaches they comprise of a light emitting diode (LED 33a), which emits light that impinges first upon the sample. From the sample the light impinges on a detector (33b); the emitter (33a) and the detector (33b) forming an emitter-detector pair (33). As shown in figure 4, the emitter and detector are disposed on the same side of the sample.

4. Claims 29-31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumizaki et al (US 6,505,010) as applied to claim 28-30-32 above, and further in view of Budnik et al. (US 5,903,796.)

As described in more detail above, Izumizaki teaches a multi-channel densitometer for measuring optical density of a sample at a plurality of probe position.

Izumizaki's densitometer comprises a plurality of probes each having a single sensor that operate by having each of the sensors shine a light at a sample and then having the sensors receive the lights after they impinge upon the sample. The sensors then output a signal to a controller circuit characteristic of the intensity of the light received by the sensors

Izumizaki, however, does not necessarily teach outputting the sample optical density values to at least one receiving device from the group comprising of host computers, networks, alphanumeric displays, graphic displays, digital storage devices, digital-to-analog converts, and means for adjusting subsequent sample processing. Budnik teaches in column 7 lines 4-34 the use of an optical densitometer to determine the density of print material on a surface. Budnik further teaches in column 7 lines 54 through column 8 lines 11 that data from the densitometer (TAC sensor) is outputted to a host computer and to display for notifying an operator that a system needs service. Budnik teaches in column 3 lines 59-62 that this function is useful in that it minimizes machine downtime and keeps extensive service to a minimum. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to output the sample optical density values obtained by the densitometer in Izumizaki's image forming apparatus to at least one device from the group consisting of host computers, networks, alphanumeric displays, graphic displays, digital storage devices, digital-to-analog converters, and means for adjusting subsequent sample processing as is taught by Budnik.

5. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumizaki et al (US 6,505,010) as applied to claims 28, 30, 32, and 33 above, and further in view of Rakitsch (US 5,854,680.)

As described in more detail above, Izumizaki teaches a multi-channel densitometer for measuring optical density of a sample at a plurality of probes have a a single sensor each. Izumizaki's densitometer comprises a plurality of sensors that operate by having each of the sensors shine a light at a sample and then having the sensors receive the lights after they impinge upon the sample. The sensors then output a signal to a controller circuit characteristic of the intensity of the light received by the sensors

Izumizaki, however, does not teach the emitter-sensor pairs being of differing emitter colors, whereby areas of the sample of differing colors can be measured with high sensitivity using light emitters of complementary color to the respective areas. Rakitsch teaches in figure 4 a densitometer that uses a set of three light emitters of red, green, and blue color that are transmitted through fiber optics 10 to illuminate substantially the same spot of the sample and as taught in column 5 lines 41-55 the light emitters are successively energized one at a time as is claimed by applicant's claim 35. Rakitsch teaches in column 6 lines 53-61 that the use of the three LED's allows the densitometer to measure the ink density values for printing ink colors cyan, magenta, yellow, and black instead of just black. Since color copiers and printers are increasingly popular and therefore the need for densitometers that are effective for multiple colors is accordingly increasing greatly; it would have been obvious to one of ordinary skill in the art at the

time the invention was made to include Rakitsch three color LED sensor in Izumizaki's densitometer.

Allowable Subject Matter

6. Claim 18-21, 26, and 27 are allowed.
7. Claims 22-25 are objected to for informalities but would be allowable if the informalities were corrected.
8. Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter:
With regards to claim 18-21: Independent claim 18, claims a multi-channel densitometer for measuring optical density of sample areas where the densitometer comprises 3 to 8 sensors distributed on a single probe. The prior art did not teach any single probes with that many sensors on them. Although some prior art apparatus teach using a plurality of probes or individual sensors none teach 3 to 8 on a single probe. For example as described above Izumizaki et al. can be interpreted in figure 4 to show two probes with a single sensor each, however Izumizaki does not show more than 2 sensors total in the entire apparatus. As explain in the applicant's remarks the additional sensors are useful

and since the prior art of record does not teach their use, claim 18 is allowed. Claims 19-21 are dependent on claim 18 and are therefore also allowed.

With regards to applicant's claims 22-25 they are dependent on allowable claim 18 and would also be allowable if the informalities objected to above were corrected.

With regards to applicant's claim 37, the prior art does not teach the subject matter of independent claim 28 with the additional teaching that the probes are of different length from each other. Therefore claim 37 would be allowable if amended to include the subject matter of claim 28.

Response to Arguments

10. Applicant's arguments filed 5/21/2003 have been fully considered but they are not persuasive.

With regards to applicant's claim 28, applicant has argued on pages 16 and 17 that Izumizaki does not show in figure 4 two separate probes with single sensors since the mechanical supporting structure for the density detectors is not shown. Although it is possible both sensor arrays are mechanically attached to the same structure, one with ordinary skill in the art at a first glance would assume that the two sensor arrays were separate probes, since as presented in figure 4 of Izumizaki they are structurally independent of each other, other than the electrical connection to the controller. Therefore the office takes the position that in fact each one can be defined as being a single probe with a single sensor.

The applicant has requested under MPEP 707.07(j) conditional request for assistance. With regards to rejected claim 28, the office recommends that the applicant amend claim 28 so that the probes must contain 3-8 sensors as is the case in allowable claim 18 or else integrate the allowable subject matter of allowable claim 37 into claim 18.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to

the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee.

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 703-305-4036. The examiner can normally be reached M-F 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached at 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

AS
June 12, 2003


RUSSELL ADAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800